

REMARKS

Favorable reconsideration of this application is respectfully requested.

Claims 40-44 are pending in this application. Claims 22-26 are canceled by the present response. Claims 22-26 and 40-44 were rejected under 35 U.S.C. § 112, first paragraph. Claims 22, 24, 26, 40, 42, and 44 were rejected under 35 U.S.C. § 102(e) as clearly anticipated by U.S. patent 5,644,148 to Kinzer. Claims 23, 25, 41, and 43 were rejected under 35 U.S.C. § 103(a) as unpatentable over Kinzer.

Addressing first the rejection of Claims 22-26 and 40-44 under 35 U.S.C. § 112, first paragraph, that rejection is traversed by the present response.

It is first noted that the outstanding rejection is traversed as the specification supports the claimed subject matter. With reference to Figure 3 in the present application as a non-limiting example, and the corresponding description in the specification, the specification sets forth that portions of the insulating film 48 on the fourth semiconductor layer 44 interposed between the third semiconductor layer 43 and the fifth semiconductor layer 54 form channel regions 53. Further, the discussion in the present specification of the operation of the device in Figure 3, for example in the present specification at page 24, line 20 et seq., only indicates the formation of a channel 53. That is, the noted description in the specification of the operation of the device in Figure 3 explains how a channel is formed in the channel region 53. The discussion of operation clearly does not indicate the formation of any other channel. Thus, the specification is believed to clearly support the claimed subject matter.

However, to promote prosecution independent Claim 40 is amended by the present response to no longer recite the term “as only channel regions”. Claim 40 is also amended to recite “said fourth semiconductor layer is the only semiconductor layer where said channel regions are formed”. That feature is supported by the original specification at page ²⁵24, line 22 et seq. where the operation is described that the channel region 53 is formed only in the

fourth semiconductor layer 44. It is believed the amendments even further support the position that the claim language is fully disclosed in the original specification.

In such ways, each of Claims 40-44 is in full compliance with all requirements under 35 U.S.C. § 112, first paragraph.

Addressing now the rejection of Claims 22, 24, 26, 40, 42, and 44 under 35 U.S.C. § 102(e) as anticipated by Kinzer, and the rejection of Claims 23, 25, 41, and 43 under 35 U.S.C. § 103(a) as unpatentable over Kinzer, those rejections are traversed by the present response.

With respect to independent Claim 40, the outstanding rejection appears to have not fully considered one of the positively recited limitations set forth therein. Specifically, independent Claim 40 recites a structure such that “said third semiconductor layer is interposed between said second semiconductor layer and a bottom of said fourth semiconductor layer, and said third semiconductor layer is in direct contact with said second semiconductor layer and so that said fourth semiconductor layer does not contact with said second semiconductor layer” (emphasis added). The outstanding rejection has disregarded that claim limitation as such a feature is clearly neither taught nor suggested by Kinzer.

The outstanding rejection is based on the position that Kinzer discloses a second semiconductor layer 52, a third semiconductor layer 61, 62, and a fourth semiconductor layer 81. As clear in, for example, Figure 19 in Kinzer the second semiconductor layer 52 contacts the fourth semiconductor layer 81. Independent Claim 40 requires a contrary structure as independent Claim 40 requires that said fourth semiconductor layer does not contact with said second semiconductor layer” (emphasis added); see for example Figure 3 in the present specification in which no portion of the fourth semiconductor layer 44 contacts the second semiconductor layer 42.

look at fig. 20, not fig. 19

fig. 20

The outstanding rejection is also improper because the Office Action does not even refer to the above-noted structure in Claim 40 in comparing the structure of Kinzer to the features of Claim 40.

Thus, independent Claim 40, and the claims dependent therefrom clearly, distinguish over the teachings in Kinzer.

As no other issues are pending in this application, it is respectfully submitted that the present application is now in condition for allowance, and it is hereby respectfully requested that this case be passed to issue.

Respectfully submitted,

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IN THE CLAIMS

22-26 (Canceled).

40. (Amended) An insulated gate semiconductor device, comprising:
 - a first semiconductor layer of a first conductivity type having first and second main surfaces on opposite sides thereof;
 - a second semiconductor layer of a second conductivity type provided on said first main surface of said first semiconductor layer;
 - a third semiconductor layer of said second conductivity type higher in an impurity concentration and thinner than said second semiconductor layer, and provided on a surface of said second semiconductor layer;
 - a fourth semiconductor layer of said first conductivity type provided on a surface of said third semiconductor layer, wherein said third semiconductor layer is interposed between said second semiconductor layer and a bottom of said fourth semiconductor layer, and said third semiconductor layer is in direct contact with said second semiconductor layer and so that said fourth semiconductor layer does not contact with said second semiconductor layer;
 - a fifth semiconductor layer of the second conductivity type selectively provided in a surface of said fourth semiconductor layer and opposing said third semiconductor layer through said fourth semiconductor layer;
- a first main electrode disposed across and connected with surfaces of said fourth and fifth semiconductor layers;

a second main electrode provided on said second main surface of said first semiconductor layer;

an insulating film provided on portions of said fourth semiconductor layer interposed between said third and fifth semiconductor layers; and

a control electrode facing said portions through said insulating film so that said portions form channel regions [as only channel regions] of said insulated gate semiconductor device, and said fourth semiconductor layer is the only semiconductor layer where said channel regions are formed.